The following listing of the claims replaces all versions of previous claims in the application.

LISTING OF CLAIMS:

1-65 (Cancelled).

66. (Currently Amended) A riser reactor configured for a fluidized catalytic conversion process including hydrocarbon catalytic cracking reactions over said catalyst wherein the riser reactor has a riser reactor height of about 10m to about 60m and is configured to provide a total reaction time of 2 to 30 seconds, said riser reactor comprising a reactor bottom and further comprising in order from the reactor bottom:

a.) a prelift zone having a prelift zone diameter of about 0.02 m to about 5 m, and a prelift zone height that is about 5% to about 10% of the riser reactor height, said prelift zone having

(i) a cracking catalyst inlet, and

(ii) a prelift medium inlet,

said prelift zone adapted to contain said cracking catalyst and adapted to lift said catalyst to a first reaction zone without cracking said feedstock in the prelift zone;

b.) a first reaction zone adapted to accept said cracking catalyst from said prelift zone and hydrocarbon feedstock to react said feedstock with said catalyst at a first reaction zone time to create first reacted vapor, and adapted to lift said catalyst, said unreacted feedstock, and said first reacted vapor to a second reaction zone, said first reaction zone having

(i) a first reaction zone diameter, wherein the ratio of said first reaction zone diameter to said prelift zone diameter is about 1:1 to about 2:1, and (ii) a first reaction zone height that is about 10% to about 30% of the riser reactor height~~,~~

~~wherein said first reaction zone diameter and said first reaction zone height configured to provide a first reaction zone time of 0.8 to 1.5 seconds~~;

c.) a first conjunct section located between said first reaction zone and a second reaction zone, said first conjunct section in the form of a circular truncated cone whose vertical section isotrapezia vertex angle is about 30° to about 80 °;

d.) a second reaction zone adapted to accept said cracking catalyst, unreacted hydrocarbon feedstock, and first reacted vapor from said first reaction zone, and adapted to react said unreacted hydrocarbon feedstock and said first reacted vapor with said catalyst for a second reaction zone time to create second reacted vapor, and adapted to lift said catalyst and said second reacted vapor to an outlet zone, said second reaction zone having

(i) a second reaction zone diameter, wherein the ratio of said second reaction zone diameter to said first reaction zone diameter is about 1.5:1 to about 5:1; and (ii) a second zone reaction height that is about 30% to about 60% of the riser reactor height;

wherein said second reaction zone diameter and said second reaction zone height are configured to provide a second reaction zone time longer than said first reaction zone time; and

e.) a second conjunct section located between said second reaction zone and an outlet zone, said second conjunct section in the form of a circular truncated cone whose vertical section isotrapezia base angle is about 45° to about 85 °;

g.) an outlet zone adapted to accept said cracking catalyst and said second reacted vapor from said second reaction zone, and adapted to increase the velocity of effluent from said outlet zone to a disengager, said outlet zone having

(i) an outlet zone diameter, wherein the ratio of said outlet zone diameter to said first reaction zone diameter is about 0.8:1 to about 1.5:1; and (ii) an outlet zone height that is up to about 20% of the riser reactor height;

~~wherein said outlet zone diameter and said outlet zone height are configured to provide an outlet zone reaction time of 0.5 seconds to 0.8 seconds.~~

67. (Previously Presented) The riser reactor of Claim 66 further comprising:

(i) a horizontal tube connecting the outlet zone to said disengager.

68. (Previously Presented) The riser reactor of Claim 66 wherein:

(i) the vertical section isotrapezia vertex angle of the first conjunct section is about 45°; and

(ii) the vertical section isotrapezia base angle of the seond conjunct section is about 60° ;

69. (Previously Presented) The riser reactor of Claim 66 wherein:

(i) the ratio of the first reaction zone diameter to the prelift zone diameter is 1:1; and

(ii) the ratio of the second reaction zone diameter to the first reaction zone diameter is 2:1 to 4:1.

70. (Previously Presented) The riser reactor of Claim 66 wherein said first conjunct section further comprises a catalyst inlet.

71. (Previously Presented) The riser reactor of Claim 66 wherein said second conjunct section further comprises a quenching medium inlet.

72. (Previously Presented) The riser reactor of Claim 66 wherein said riser reactor is configured to provide a total reaction time of 3 to 25 seconds.